AMENDMENT

To: Examiner of the Patent Office

1. Identification of the International Application

PCT/JP2004/005283

2. Applicant

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4. Item to be Amended: Claims

5. Subject Matter of Amendment

(1) Claim 1 is combined with original claim 6 so as to include an international standard unit "0.02 N/m" before "20 dyne/cm".

(2) Claim 11 is amended so as to be dependent upon claim 1.

(3) Claim 12 is combined with original claim 18 so as to include an international standard unit "0.02 N/m" before "20 dyne/cm".

(4) In claim 26, a typographical error is corrected.

(5) Claims 6 and 18 are cancelled.

6. List of Attached Documents

(1) Replacement sheets of pages 79 to 82, 84

CLAIMS

1. (Amended) A discharging solution for forming patterns on a surface of a base, comprising organic molecules having fluoroalkyl chains as a first pattern formation material,

wherein the organic molecules are at least one selected from the group consisting of : organic molecules containing at least one group selected from a chlorosilyl group, an alkoxy group, a mercapto group, a hydroxy group, and an amino group; organic molecules of a straight chain containing a carboxy group; disulfide; silazane; and dithiol;

wherein the surface tension of the solution is 0.02 N/m (20 dyne/cm) or more.

2. The discharging solution according to claim 1, further comprising a second pattern formation material.

3. The discharging solution according to claim 2, wherein the second pattern formation material contains at least one kind of material selected from the group consisting of a precursor of a metal-oxide dielectric, a semiconductor, metal, and a polymer.

4. The discharging solution according to claim 3, wherein the second pattern formation material is the metal and the metal is a metal colloid.

5. The discharging solution according to claim 3, wherein the second pattern formation material is the polymer and the polymer is at least one kind selected from the group consisting of a conductive polymer, a semiconductor polymer, an insulting polymer, and a light-curable polymer.

6. (Canceled)

7. The discharging solution according to claim 1, wherein the organic molecules are at least one selected from the group consisting of molecules represented by a composition formula: $CF_3(CF_2)_nC_2H_4Si\{(O\text{-}CH_2CH_2)_m\text{-}OR^1\}_3$, and hydrolysate of the molecules, and

in the composition formula, R^1 is a methyl group, an ethyl group, a propyl group, or a butyl group, and *n* and *m* are natural numbers of 1 to 10.

8. The discharging solution according to claim 3, wherein the second pattern formation material is the precursor of the metal-oxide dielectric and the precursor of the metal-oxide dielectric is at least one selected from the group consisting of metal alkoxide, metal acetylacetonate, metal carboxylate, and a metal inorganic compound.

9. The discharging solution according to claim 5, wherein the polymer is the semiconductor polymer and the semiconductor polymer is at least one selected from the group consisting of polyalkylthiophene and poly-9,9'dialkyl-fluorene-co-bithiophene.

10. The discharging solution according to claim 1, wherein a boiling point of a solvent contained in the solution is 80°C or higher.

11. (Amended) The discharging solution according to claim 1, wherein the solution is applicable for forming patterns on a surface of a base by an ink-jet method.

12. (Amended) A method for producing patterns comprising:

discharging a solution having a surface tension of 0.02 N/m (20 dyne/cm) or more, in which organic molecules having fluoroalkyl chains are dissolved as a first pattern formation material, to a surface of a base by an ink-jet method to perform drawing; and

wherein the organic molecules are at least one selected from the group consisting of: organic molecules containing at least one group selected from a chlorosilyl group, an alkoxy group, a mercapto group, a hydroxy group, and an amino group; organic molecules of a straight chain containing a carboxy group; disulfide; silazane; and dithiol;

evaporating a solvent contained in the discharged solution to form patterns containing the organic molecules.

13. The method for producing patterns according to claim 12, the solution further comprising a second pattern formation material, the method comprising evaporating a solvent contained in the discharged solution to form patterns containing the organic molecules and the second pattern formation material.

14. The method for producing patterns according to claim 13, comprising evaporating a solvent contained in the discharged solution to form patterns including a first pattern region containing a relatively large amount of the organic molecules and a second pattern region containing a relatively large amount of the second pattern formation material,

wherein the patterns are formed so that the first pattern region is present on the base side with respect to the second pattern region.

15. The method for producing patterns according to claim 13, wherein the

second pattern formation material contains at least one kind of material selected from the group consisting of a precursor of a metal-oxide dielectric, a semiconductor, metal, and a polymer.

16. The method for producing patterns according to claim 15, wherein the second pattern formation material is the metal and the metal is a metal colloid.

17. The method for producing patterns according to claim 15, wherein the second pattern formation material is the polymer and the polymer is at least one kind selected from the group consisting of a conductive polymer, a semiconductor polymer, an insulting polymer, and a light-curable polymer

18. (Canceled)

19. The method for producing patterns according to claim 12, wherein the organic molecules are at least one selected from the group consisting of molecules represented by a composition formula: $CF_3(CF_2)_nC_2H_4Si\{(O\text{-}CH_2CH_2)_m\text{-}OR^1\}_3$, and hydrolyzate of the molecules, and

in the composition formula, R^1 is a methyl group, an ethyl group, a propyl group, or a butyl group, and *n* and *m* are natural numbers of 1 to 10.

20. The method for producing patterns according to claim 15, wherein the second pattern formation material is the precursor of the metal-oxide dielectric and the precursor of the metal-oxide dielectric is at least one selected from the group consisting of metal alkoxide, metal acetylacetonate, metal carboxylate, and a metal inorganic compound

the electronic device is at least one selected from the group consisting of metal wiring, an electrode, a transistor, a resistor, a capacitor, a microlens, and an imaging device.

26. (Amended) An electronic device comprising a base and patterns formed on a surface of the base,

wherein the patterns include a first pattern region containing organic molecules having fluoroalkyl chains and a second pattern region containing at least one selected from metal, a semiconductor, a metal oxide, and a polymer,

the first pattern region and the second pattern region are stacked in this order on the surface of the base, and

a shape of the first pattern region is similar figure to a shape of the second pattern region.

27. The electronic device according to claim 26, wherein the first pattern region is a monomolecular film of the organic molecules.

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4. Item to be Amended: Claims

5. Subject Matter of Amendment

(1) In claims 1 and 12, the following limitation is recited: a hydroxy group or an amino group is also contained in the organic molecules of a straight chain (the binding force thereof with respect to the base increases).

(2) Regarding the term "similar figure" in claim 26, the error in writing was corrected.

6. List of Attached Documents

(1) Replacement sheets of pages 79 to 84

CLAIMS

1. (Amended) A discharging solution for forming patterns on a surface of a base, comprising organic molecules having fluoroalkyl chains as a first pattern formation material,

wherein the organic molecules are at least one selected from the group consisting of : organic molecules containing at least one group selected from a chlorosilyl group, an alkoxy group, a mercapto group, ~~a hydroxy group, and an amino group~~; organic molecules of a straight chain containing a carboxy group or hydroxy group or an amino group; disulfide; silazane; and dithiol;

wherein the surface tension of the solution is 0.02 N/m (20 dyne/cm) or more.

2. The discharging solution according to claim 1, further comprising a second pattern formation material.

3. The discharging solution according to claim 2, wherein the second pattern formation material contains at least one kind of material selected from the group consisting of a precursor of a metal-oxide dielectric, a semiconductor, metal, and a polymer.

4. The discharging solution according to claim 3, wherein the second pattern formation material is the metal and the metal is a metal colloid.

5. The discharging solution according to claim 3, wherein the second pattern formation material is the polymer and the polymer is at least one kind selected from the group consisting of a conductive polymer, a semiconductor polymer, an insulting polymer, and a light-curable polymer.

6. (Canceled)

7. The discharging solution according to claim 1, wherein the organic molecules are at least one selected from the group consisting of molecules represented by a composition formula: $CF_3(CF_2)_nC_2H_4Si\{(O\text{-}CH_2CH_2)_m\text{-}OR^1\}_3$, and hydrolysate of the molecules, and

in the composition formula, R^1 is a methyl group, an ethyl group, a propyl group, or a butyl group, and *n* and *m* are natural numbers of 1 to 10.

8. The discharging solution according to claim 3, wherein the second pattern formation material is the precursor of the metal-oxide dielectric and the precursor of the metal-oxide dielectric is at least one selected from the group consisting of metal alkoxide, metal acetylacetonate, metal carboxylate, and a metal inorganic compound.

9. The discharging solution according to claim 5, wherein the polymer is the semiconductor polymer and the semiconductor polymer is at least one selected from the group consisting of polyalkylthiophene and poly-9,9'dialkyl-fluorene-co-bithiophene.

10. The discharging solution according to claim 1, wherein a boiling point of a solvent contained in the solution is 80°C or higher.

11. The discharging solution according to claim 1, wherein the solution is applicable for forming patterns on a surface of a base by an ink-jet method.

12. (Amended) A method for producing patterns comprising:

discharging a solution having a surface tension of 0.02 N/m (20 dyne/cm) or more, in which organic molecules having fluoroalkyl chains are dissolved as a first pattern formation material, to a surface of a base by an ink-jet method to perform drawing; and

wherein the organic molecules are at least one selected from the group consisting of: organic molecules containing at least one group selected from a chlorosilyl group, an alkoxy group, a mercapto group, ~~a hydroxy group, and an amino group~~; organic molecules of a straight chain containing a carboxy group or hydroxy group or an amino group; disulfide; silazane; and dithiol;

evaporating a solvent contained in the discharged solution to form patterns containing the organic molecules.

13. The method for producing patterns according to claim 12, the solution further comprising a second pattern formation material, the method comprising evaporating a solvent contained in the discharged solution to form patterns containing the organic molecules and the second pattern formation material.

14. The method for producing patterns according to claim 13, comprising evaporating a solvent contained in the discharged solution to form patterns including a first pattern region containing a relatively large amount of the organic molecules and a second pattern region containing a relatively large amount of the second pattern formation material,

wherein the patterns are formed so that the first pattern region is present on the base side with respect to the second pattern region.

15. The method for producing patterns according to claim 13, wherein the second pattern formation material contains at least one kind of material

selected from the group consisting of a precursor of a metal-oxide dielectric, a semiconductor, metal, and a polymer.

16. The method for producing patterns according to claim 15, wherein the second pattern formation material is the metal and the metal is a metal colloid.

17. The method for producing patterns according to claim 15, wherein the second pattern formation material is the polymer and the polymer is at least one kind selected from the group consisting of a conductive polymer, a semiconductor polymer, an insulting polymer, and a light-curable polymer

18. (Canceld)

19. The method for producing patterns according to claim 12, wherein the organic molecules are at least one selected from the group consisting of molecules represented by a composition formula: $CF_3(CF_2)_nC_2H_4Si\{(O\text{-}CH_2CH_2)_m\text{-}OR^1\}_3$, and hydrolyzate of the molecules, and

in the composition formula, R^1 is a methyl group, an ethyl group, a propyl group, or a butyl group, and *n* and *m* are natural numbers of 1 to 10.

20. The method for producing patterns according to claim 15, wherein the second pattern formation material is the precursor of the metal-oxide dielectric and the precursor of the metal-oxide dielectric is at least one selected from the group consisting of metal alkoxide, metal acetylacetonate, metal carboxylate, and a metal inorganic compound

21. The method for producing patterns according to claim 17, wherein the

polymer is the semiconductor polymer and the semiconductor polymer is at least one selected from the group consisting of polyalkylthiophene and poly-9,9'dialkyl-fluorene-co-bithiophene

22. The method for producing patterns according to claim 12, wherein a boiling point of the solvent is 80°C or higher.

23. The method for producing patterns according to claim 12, wherein, when the solution is discharged to the surface of the base, a surface temperature of the base is set to be lower by 5°C or more than a temperature of the solution to be discharged to the surface of the base.

24. A method for producing an electronic device comprising a method for producing patterns that includes:

discharging a solution having a surface tension of 0.02 N/m (20 dyne/cm) or more, in which organic molecules having fluoroalkyl chains are dissolved as a first pattern formation material, to a surface of a base by an ink-jet method to perform drawing, the solution further containing a second pattern formation material; and

evaporating a solvent contained in the discharged solution to form patterns containing the organic molecules and the second pattern formation material.

25. The method for producing an electronic device according to claim 24, wherein the second pattern formation material is at least one kind of material selected from the group consisting of a precursor of a metal-oxide dielectric, a semiconductor, metal, and a polymer, and

the electronic device is at least one selected from the group consisting

of metal wiring, an electrode, a transistor, a resistor, a capacitor, a microlens, and an imaging device.

26. (Amended) An electronic device comprising a base and patterns formed on a surface of the base,

wherein the patterns include a first pattern region containing organic molecules having fluoroalkyl chains and a second pattern region containing at least one selected from metal, a semiconductor, a metal oxide, and a polymer,

the first pattern region and the second pattern region are stacked in this order on the surface of the base, and

a shape of the first pattern region is similar figure <u>of geometry</u> to a shape of the second pattern region.

27. The electronic device according to claim 26, wherein the first pattern region is a monomolecular film of the organic molecules.